

DEPARTMENT Natural Resources

Office Memorandum

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DATE: 10/23/86

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SUBJECT: GEOPHYSICAL SURVEY OF INTERPLASTIC CORPORATION

EPA Region 5 Records Ctr.



387910

On September 24, 1986 an electromagnetic induction survey was conducted on the paved parking lot north of the Interplastic Corporation plant facility at 2015 N.E. Broadway. The survey consisted of both inphase and quadrature phase readings using the Geonics EM-31 Electromagnetometer. The survey objective was to determine the location of a reported landfill suspected of containing metal barrels.

Study Area

The study area was part of a triangular shaped, paved lot for tank wagon and employee parking on the north side of the plant facility. The suspected burial area is roughly 60 meters north of the chain link fence gate (See Figure 1). Station 0,0 was located 36.7 meters north of the northeast corner of the chain link fence. An inphase or "metal detection" and quadrature phase survey was run on a triangular grid measuring 30 by 30 by 35 meters, with readings at 2.5 meter intervals.

Inphase

Inphase readings were taken at each station with vertical dipoles using both north-south and east-west orientations. The data was plotted with the Golden Graphics' "Topo 87" and "Surf 87" contouring programs. Figures 2 and 3 are plan views of the data. Figures 4 and 5 are 3-D views for the data in Figures 2 and 3 respectively. These results are very similar, each plot shows a conductivity "peak" in the northeast corner of the survey area (Feature A). The plot also shows a ridge of decreasing conductivity (Feature B) running west-south-west from the "peak". There also are two small conductive highs, one southwest (Feature C) and one south (Feature D) of the "peak".

Quadrature Phase

Quadrature readings were taken at each station with vertical dipoles using both north-south and east-west orientations. The data was plotted with the Golden Graphics' "Topo 87" and "Surf 87" contouring programs. Figures 6 and 7 are plan views of the data. Figures 8 and 9 are 3-D views for the data in Figures 6 and 7 respectively. These plots are similar to the inphase plots in that there is a conductive "peak" (Feature E) and a zone of decreasing conductivity (Feature F) emanating from the "peak".

Interpretation of Results

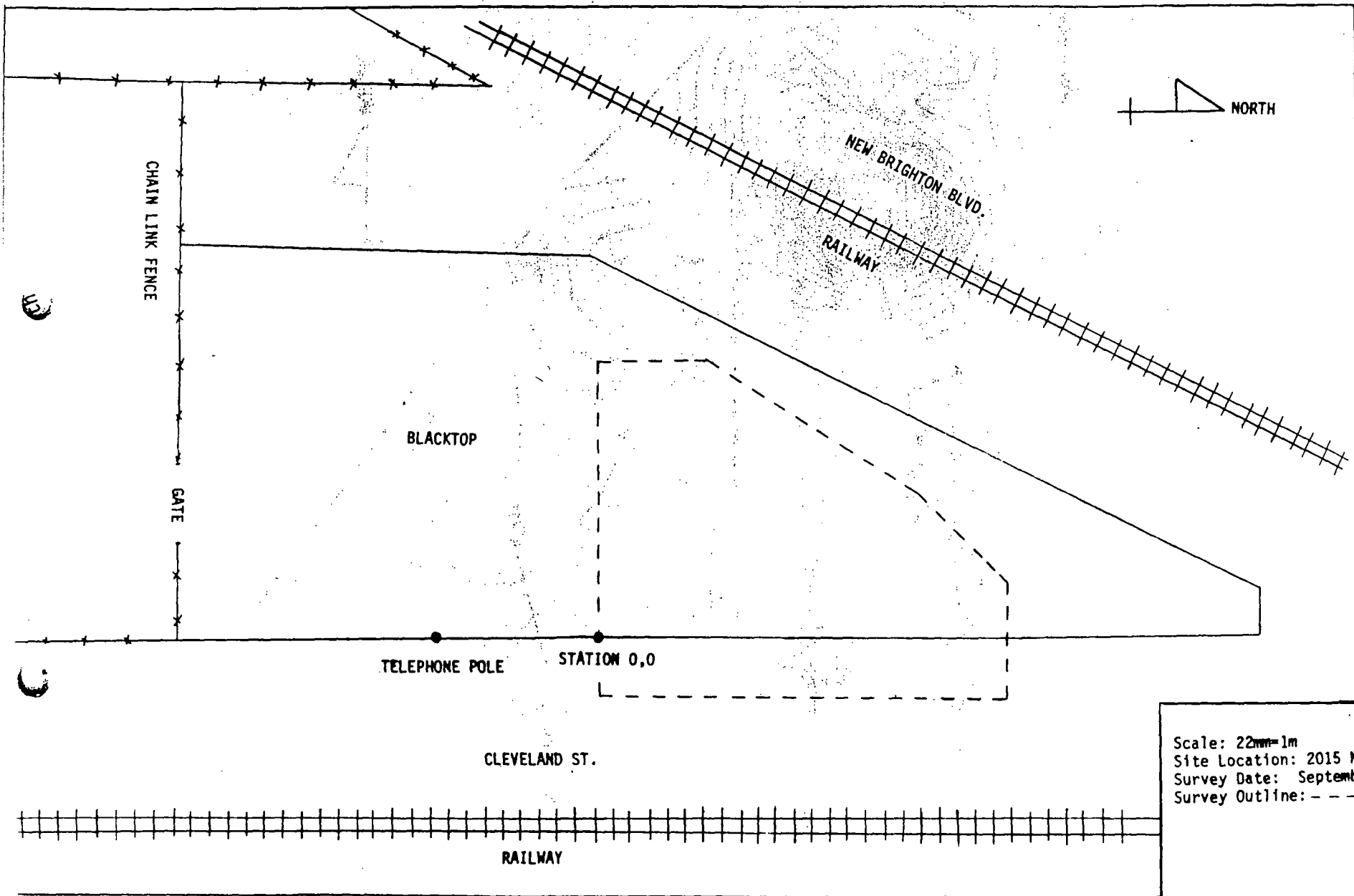
The main points of interest which can be deduced by examination of Figures 2-9 are: (1) a conductivity "peak" [(Feature A/E) Figure 10] centered at approximately station 2,28. This anomaly correlates nicely with the location of the reported barrels. (2) A linear anomaly (Feature B) which could be a trench containing metal. (3) Several smaller conductive highs (Features C and D) which may be due to buried metal. (4) The conductivity anomaly (Feature F) extends to the south of the inphase anomaly. This could be indicative of a contaminant plume moving away from the suspected drums or simply a larger area of disturbed material.

Recommendations for Further Action

The electromagnetic survey revealed one large anomaly near the suspected location of burial. Therefore, soil borings or a test pit should be centered on Feature A/E (Figure 10). Secondary "metallic" targets are the anomalous areas described as Features B, C and D. Soil borings in the conductive high (Feature F) may indicate the presence of a contaminant plume. Extension of the EM survey lines on all sides of the gridded area may define additional targets.

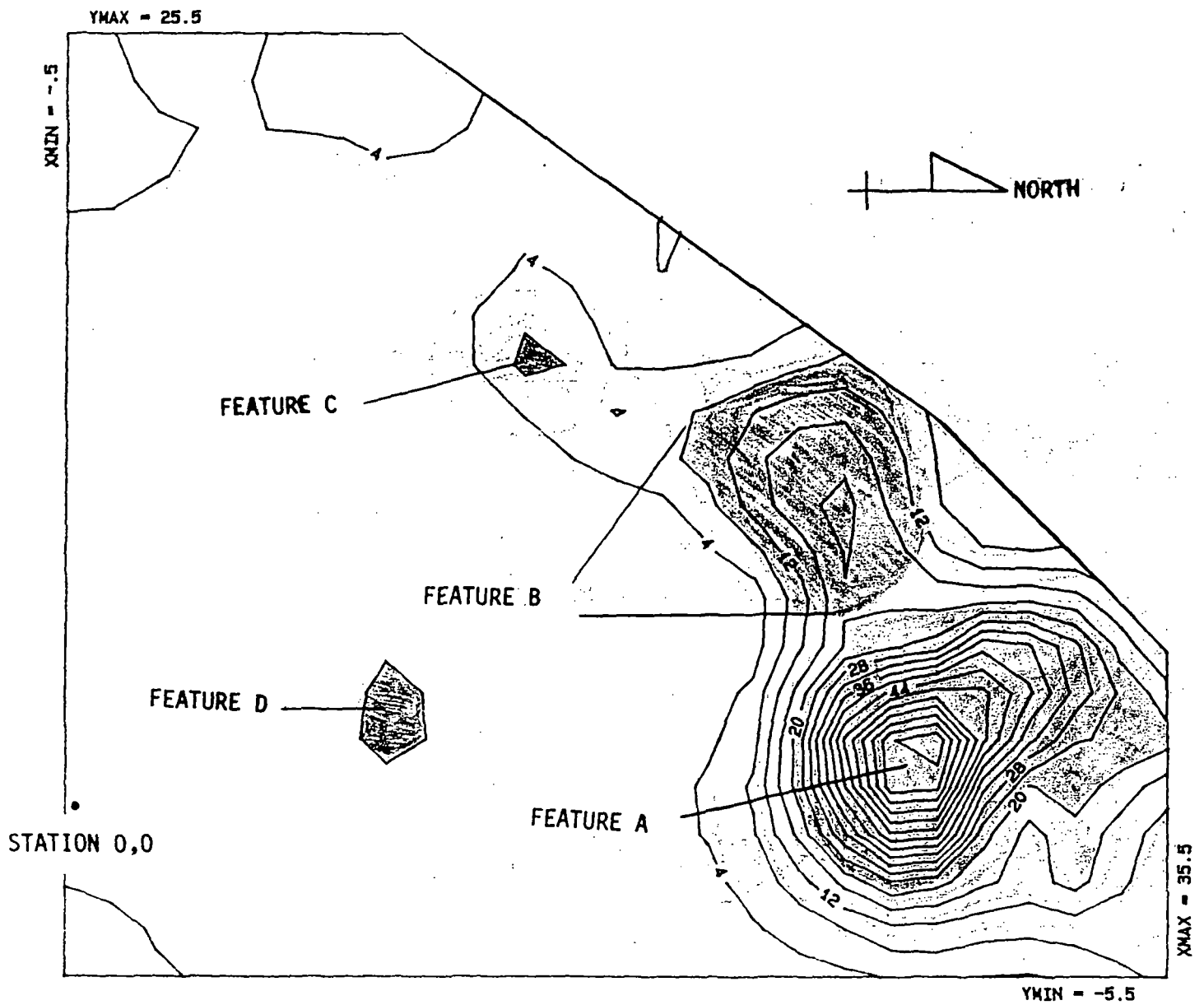
JF:tjb

FIGURE 1



Scale: 22mm=1m
Site Location: 2015 NE Broadway
Survey Date: September 24, 1986
Survey Outline: - - - -

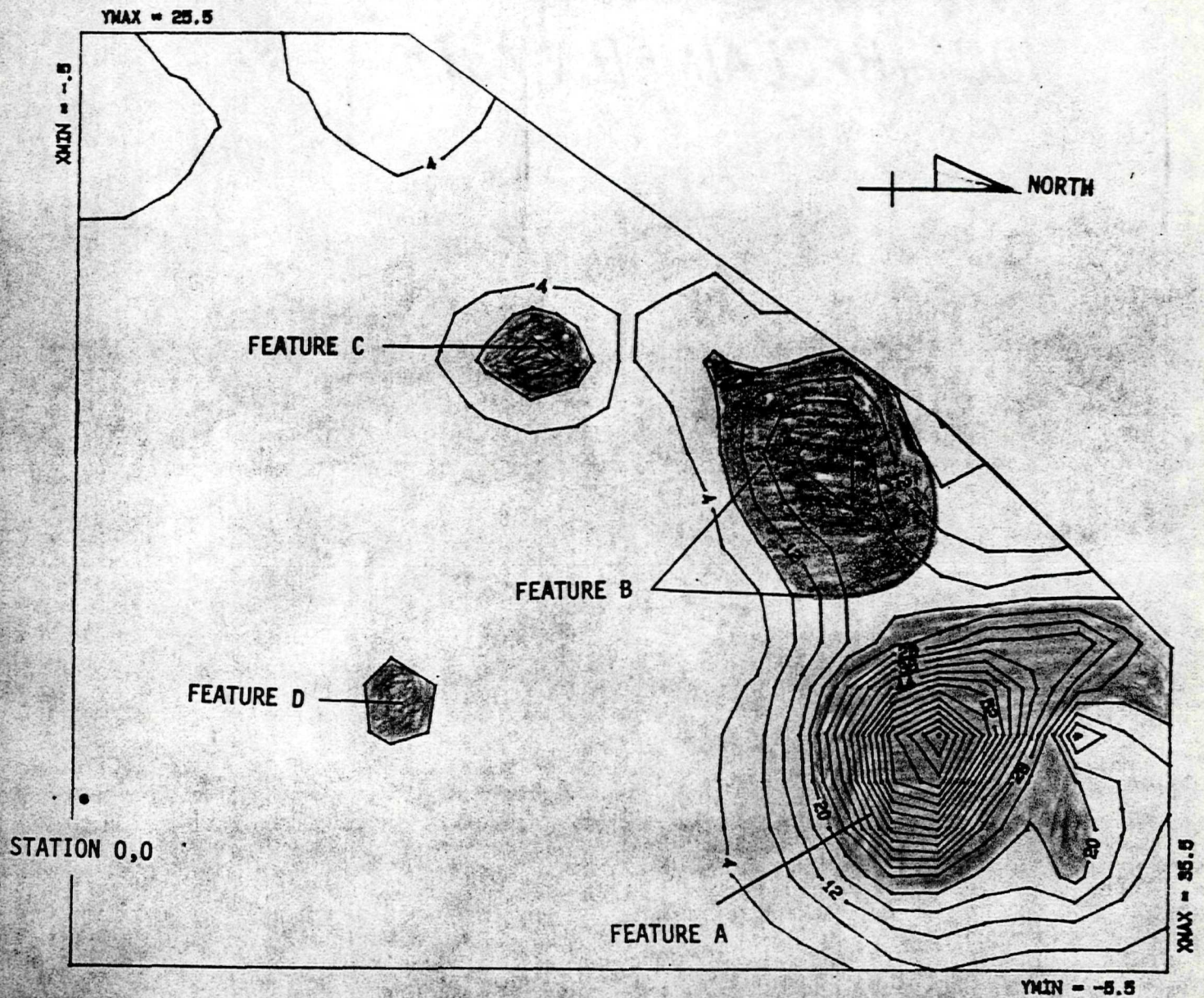
FIGURE 2



INTERPLASTIC NS VERTICAL INPHASE

Scale: 50mm=1m
Conductivity units: mmhos/m
Contour interval: 4 mmhos/m

FIGURE 3



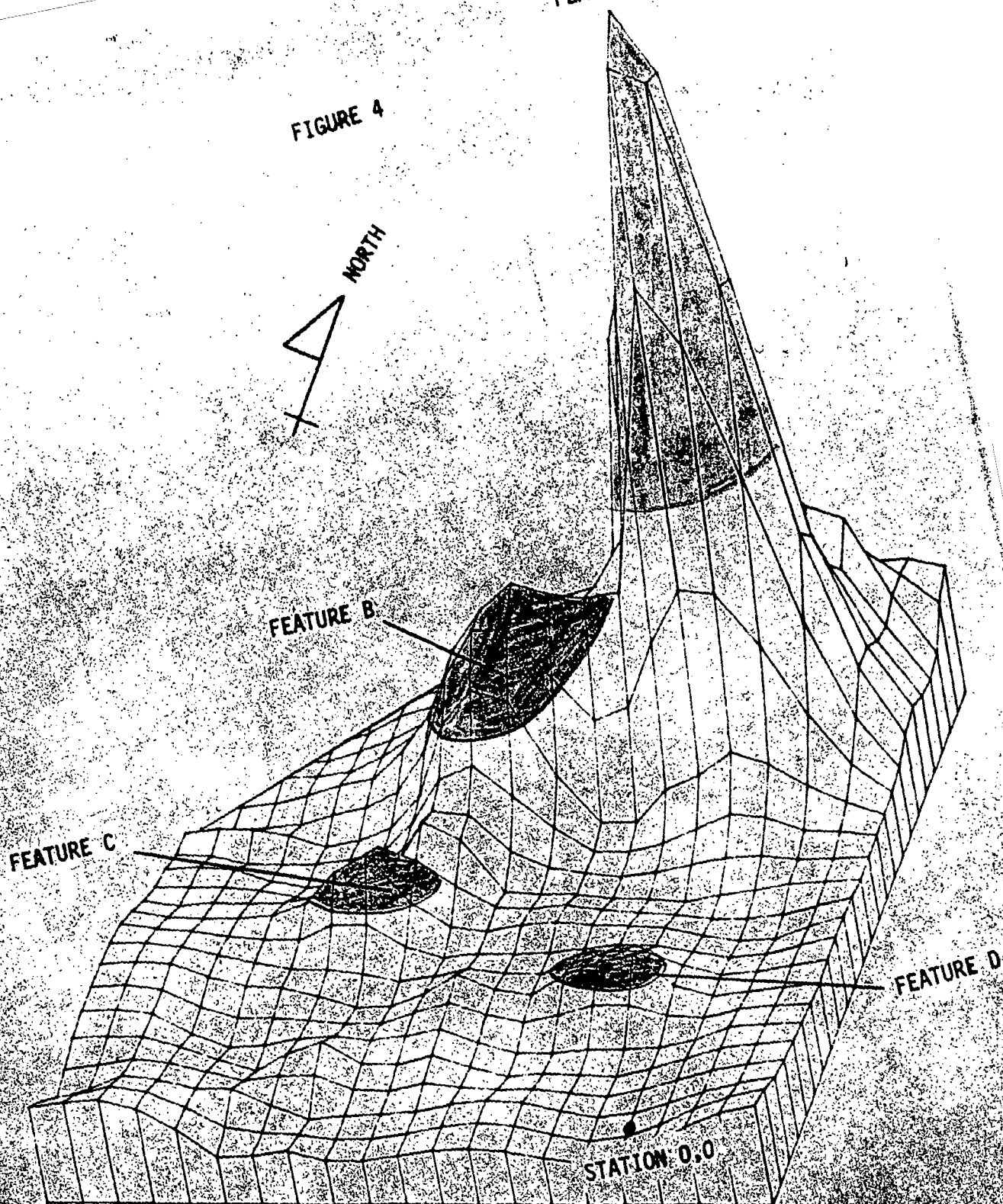
INTERPLASTIC EW VERTICAL INPHASE

Scale: 50mm=1m
Conductivity units: mmhos/m
Contour interval: 4 mmhos/m

FEATURE A

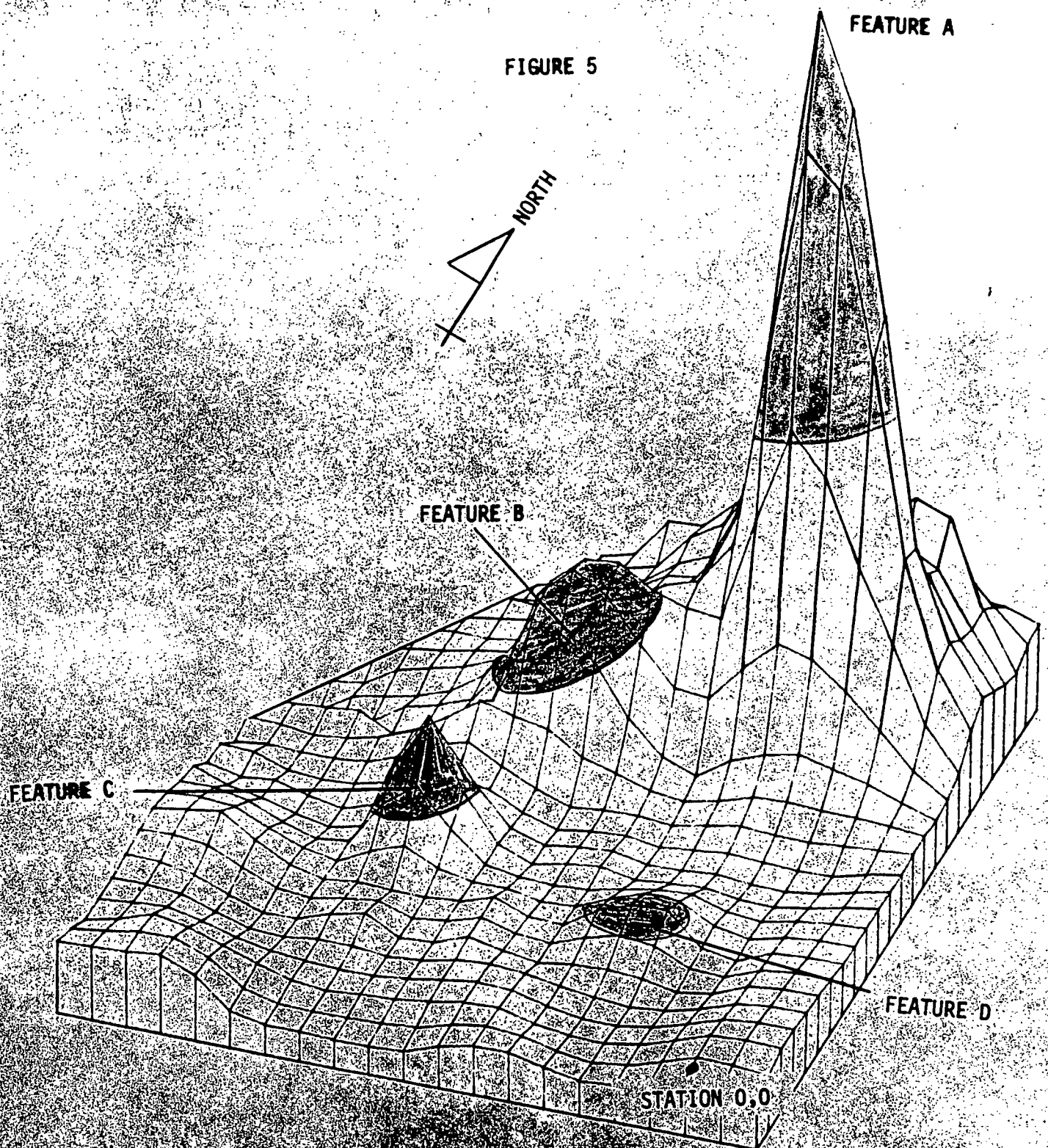
FIGURE 4

NORTH



INTERPLASTIC NS VERTICAL INPHASE
NOT TO SCALE

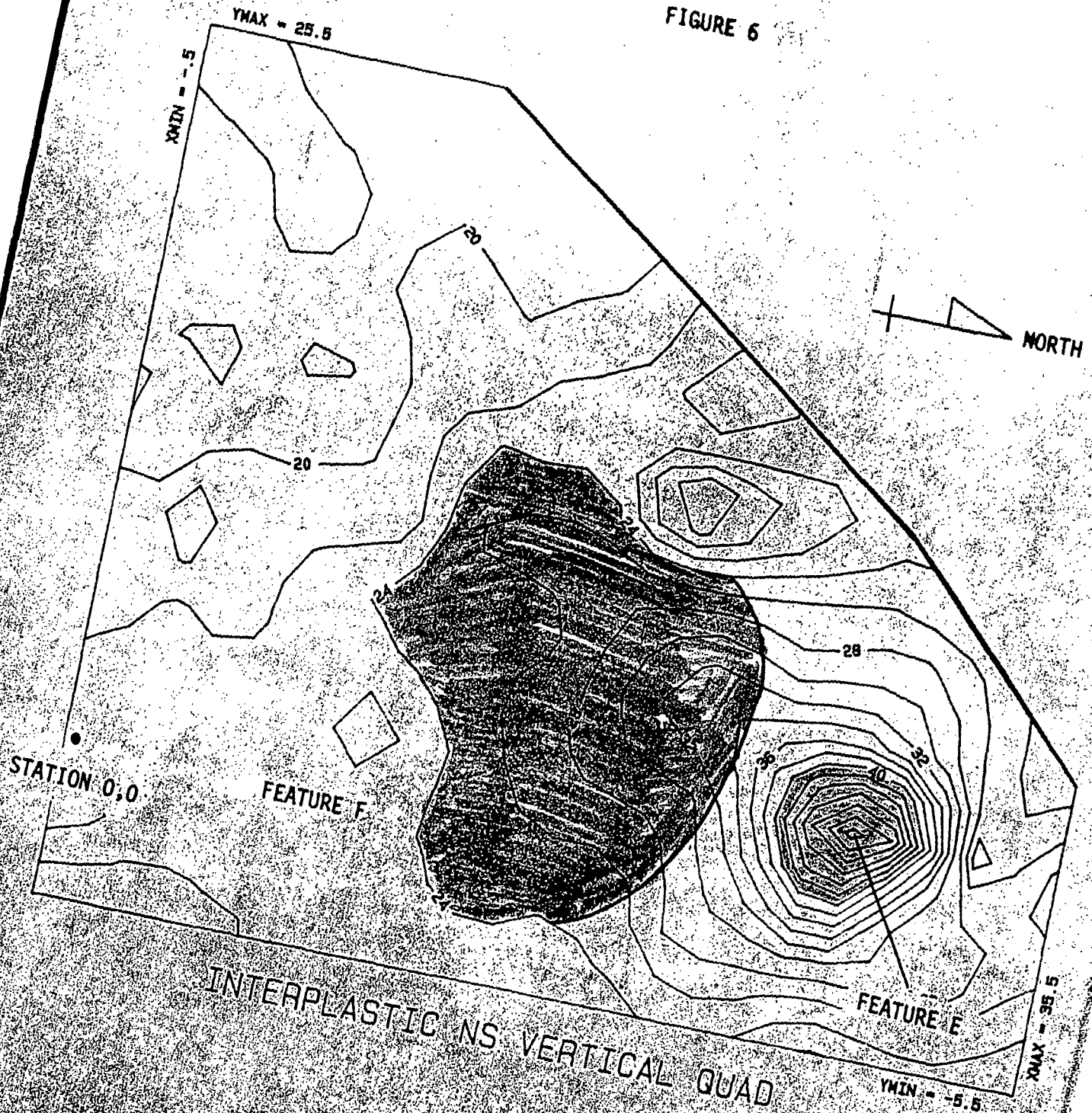
FIGURE 5



INTERPLASTIC EW VERTICAL INPHASE

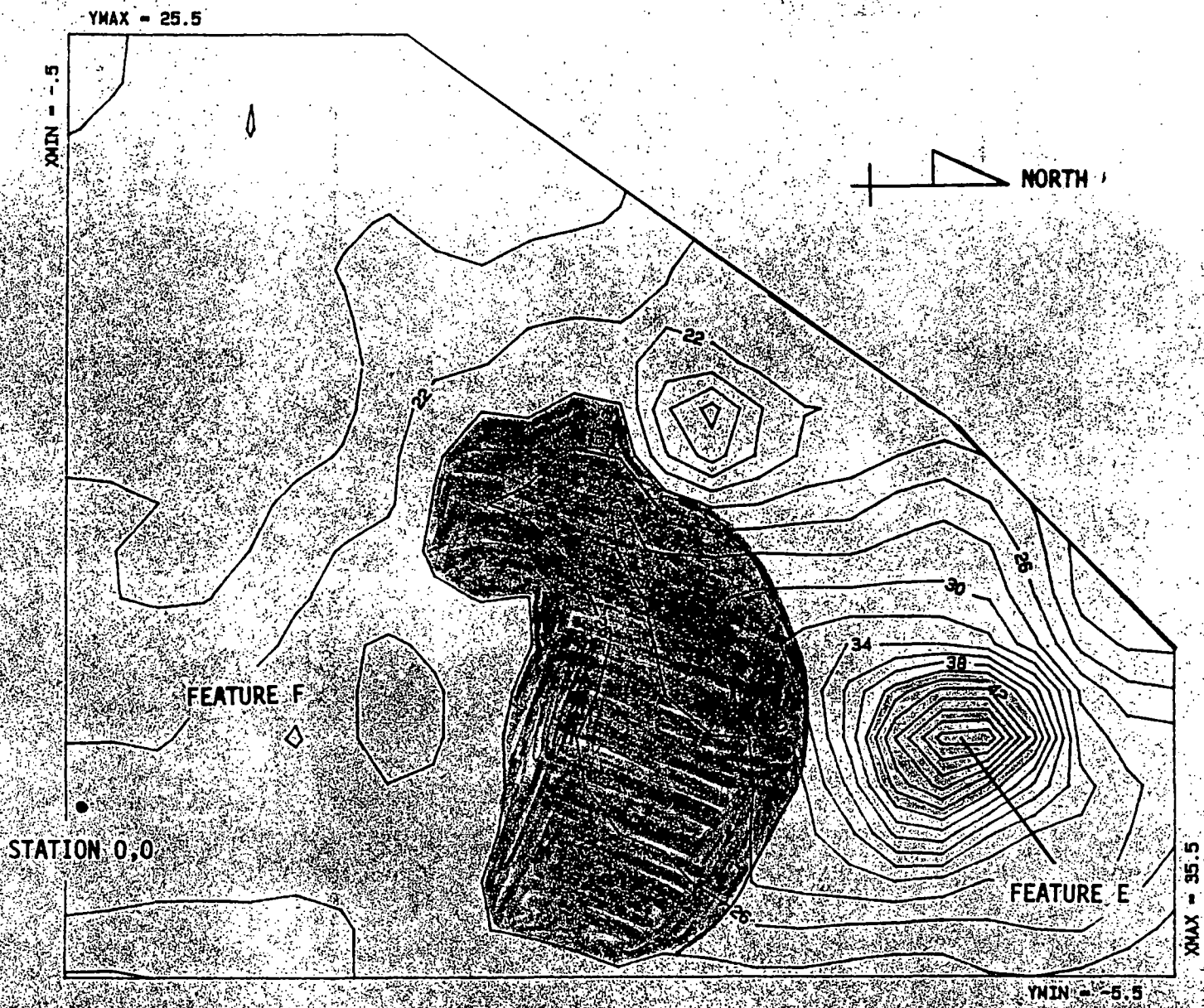
NOT TO SCALE

FIGURE 6



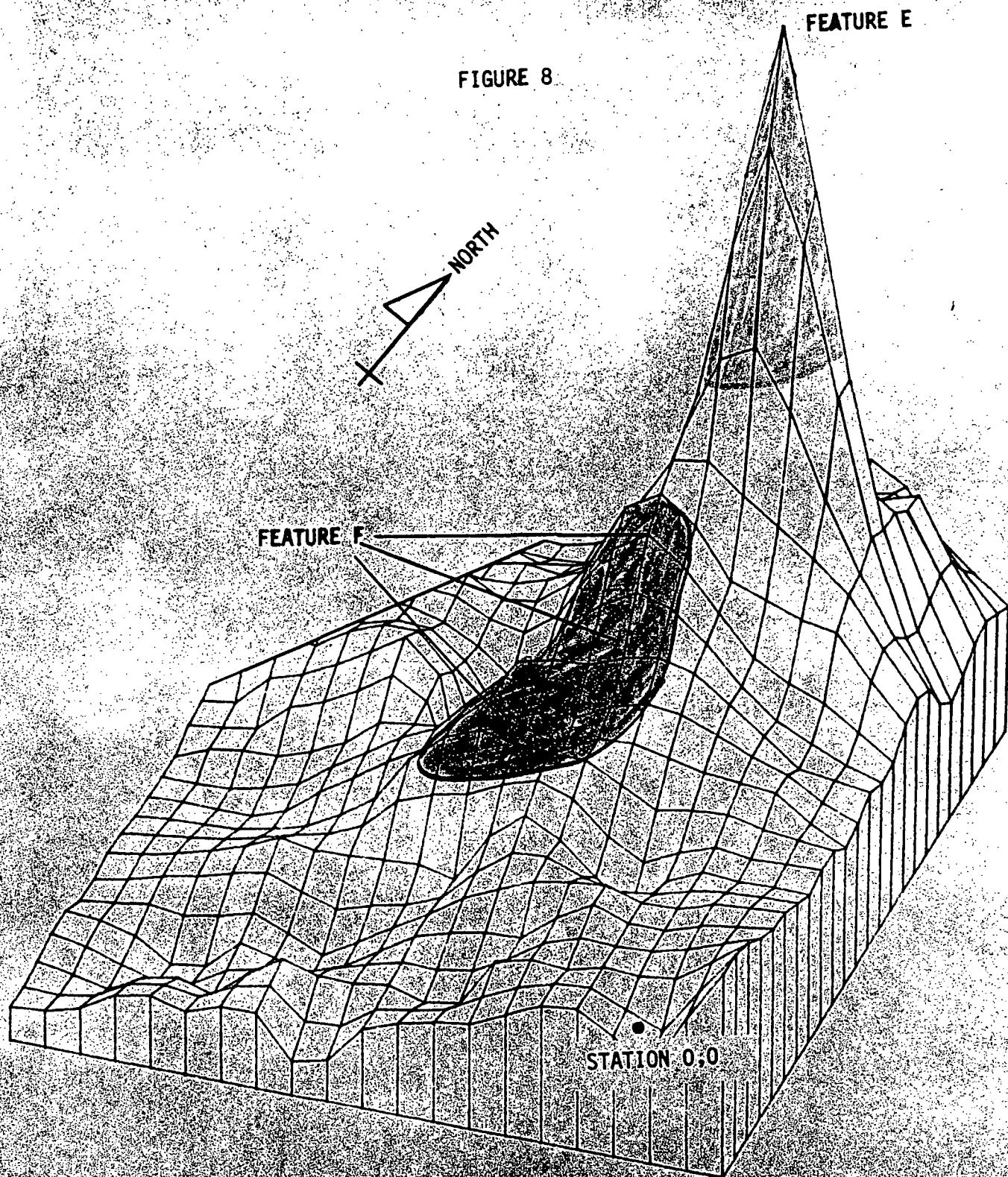
Scale: 50mm=1m
Conductivity units: mmhos/m
Contour interval: 2 mmhos/m

FIGURE 7



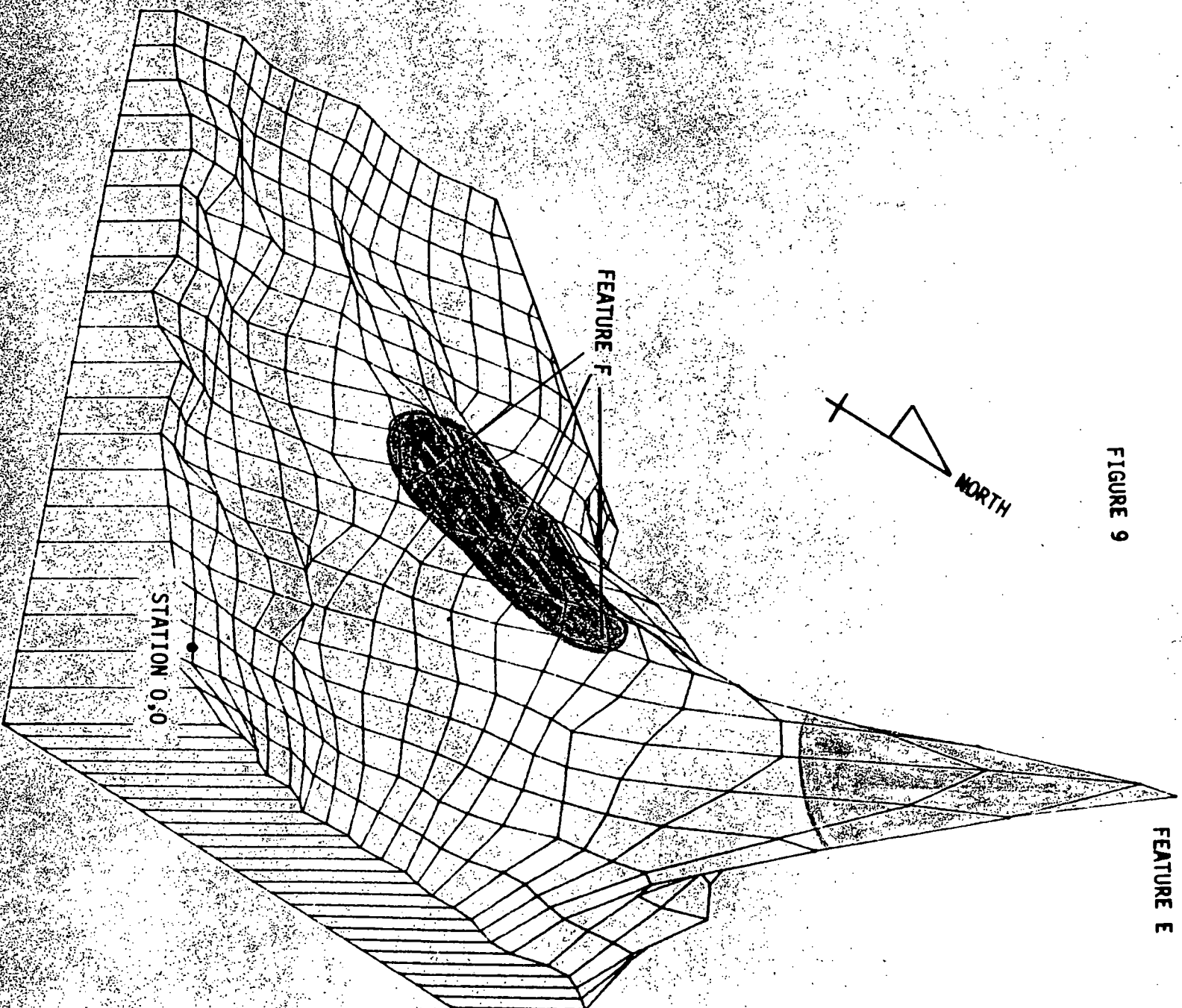
INTERPLASTIC EW VERTICAL QUAD

Scale: 50mm=1m
Conductivity units: mmhos/m
Contour interval: 2 mmhos/m



INTERPLASTIC NS VERTICAL QUAD
NOT TO SCALE

FIGURE 9



INTERPLASTIC EM VERTICAL QUAD

NOT TO SCALE

FIGURE 10

